

**ENVIRONMENTAL ASSESSMENT FOR 11 BLM ALLOTMENTS
LOCATED IN THE UPPER CANADIAN/UTE RESERVOIR AND CONCHAS WATERSHEDS
DOI-BLM-NM-F020-2009-0022-EA**

PURPOSE AND NEED

One of the major uses of public lands administered by the Bureau of Land Management (BLM) has traditionally been the grazing of cattle, sheep or horses for the benefit of individuals and communities throughout the western United States. This use is regulated by public land legislation, including the Taylor Grazing Act, the Endangered Species Act, the Federal Land Policy and Management Act, and the Public Rangelands Improvement Act. To ensure legislative compliance, the BLM needs to provide for livestock grazing in a manner that promotes healthy, sustainable rangeland ecosystems.

This document provides information necessary to determine whether, and under what conditions, the BLM should renew permits for cattle grazing on 11 allotments within the Upper Canadian/Ute Reservoir and Conchas watersheds for an additional 10 years. The 11 allotments are being analyzed in one document in order to address the cumulative effects of livestock on the BLM parcels within the Upper Canadian/Ute Reservoir and Conchas watersheds and to reduce the volume of paper involved in the public notification process. The allotments addressed in this Environmental Assessment include: #718 Conchas Rim, #769 Corazon Creek, #797 Yegua Mesa, #800 Conchas Canyon, #813 Cuervo Mesa, #846 Straddle 104, #858 North Mesa, #869 Mesa Rica Breaks, #883 Cañon Padilla, #890 Cañon Indio and #934 Trementina Peak. Individual allotment maps are available at the Taos Field Office or can be obtained by visiting www.geocommunicator.gov.

CONFORMANCE WITH PLANS

The proposed permit renewals within this document are in conformance with the Taos Resource Area Management Plan (1988). Livestock grazing impacts were analyzed on a Resource Area wide basis in the Taos Resource Management Plan. An Allotment Evaluation (AE) document has been prepared for each allotment and is available for review at the Taos Field Office.

SCOPE / IDENTIFICATION OF ISSUES

In January of 2008 a meeting was held with the BLM interdisciplinary team to inform them that these permits needed to be renewed, and this warranted a field visit to determine if standards and guidelines are being met in the subject allotments. Also, on March 10, 2008 a letter was sent to all interested publics to inform them that the subject allotments were being visited to assess standards and guidelines. Field evaluations were conducted on 4/1/2008 (#934), 6/3/2008 (#797, #800 and #883), 6/4/2008 (#846, #858, #869 and #890) and 6/5/2008 (#718, #769 and #813). After the field evaluations were completed and Allotment Evaluations were prepared, the interested public was given an opportunity to provide comments on evaluations from February 9, 2009 through February 27, 2009.

Based on these efforts, the following issues have been determined relevant to the analysis of this action and are addressed in the Affected Environment / Environmental Impacts section:

- | | | |
|----------------------------------|------------------------------------|----------------------------|
| • Air Quality | • Vegetation | • Cultural Resources |
| • Climate | • Noxious Weeds | • Social / Economic Issues |
| • Water Quality | • Wildlife | |
| • Standards for Rangeland Health | • Threatened or Endangered Species | |

The following issues were considered but dismissed from analysis:

- **Areas of Critical Environmental Concern / Special Management Areas:** None of these areas are found

- **Wilderness / Wilderness Study Areas:** None of these areas are found within the subject allotments.
- **Wild and Scenic Rivers:** No waters within the allotment are under this designation.
- **Floodplains:** There are no floodplains within the subject allotments and no ephemeral channels or arroyos are being altered under the proposed action.
- **Wetlands / Riparian Areas:** There are no wetlands or riparian areas within the subject allotments.
- **Hazardous of Solid Wastes:** There were no hazardous or solid wastes identified on the subject allotments.
- **Prime or Unique Farmland:** It has been determined by the Natural Resources Conservation Service (NRCS) that the Taos Field Office contains no prime or unique farmland.
- **Recreation:** There are no developed recreation sites on the subject allotments.
- **Native American Religious Concerns:** There have been no areas of concern identified within the subject allotments. All tribes within the Field Office boundary will receive the opportunity to provide information on any areas of concern in or near the subject allotments.

Proposed Action (same as No Action Alternative)

Re-issue a term grazing permit without any changes as outlined in Table 1. For additional information, refer to Allotment Evaluation documents available for each allotment at the Taos BLM Field Office.

[illegible]

Alternative 1, No Grazing:

Do not issue grazing permits for these allotments, thereby suspending livestock grazing.

Location and Maps

718 - Located approximately 6 miles west southwest of Conchas, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,200 and 4,500 feet. The allotment is located on the USGS Bookout Ranch Quadrangle 7.5 minute series topographic map. T. 13 N., R. 25 E. Sec 16. This allotment land status is the Bureau of Reclamation administered by the BLM.

769 - Located approximately 9 miles southwest of Trementina, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,750 and 4,900 feet. The allotment is located on the USGS Cerro de Corazon and Mesa Pino Quadrangle 7.5 minute series topographic maps. T. 13 N., R. 22 E. Sec 4, 5, 8 and 9. This allotment has 2 parcels.

797 - Located approximately 5 miles west of Trujillo, in San Miguel, New Mexico. Elevation on this allotment is roughly between 6,300 and 6,500 feet. The allotment is located on the USGS Flagstone and Laguna Huerfana Quadrangle 7.5 minute series topographic maps. T. 15 N., R. 20 E. Sec 27 and 28.

800 - Located approximately 5 miles west of Trujillo, in San Miguel, New Mexico. Elevation on this allotment is roughly between 5,800 and 6,500 feet. The allotment is located on the USGS Flagstone Quadrangle 7.5 minute series topographic map. T. 15 N., R. 20 E. Sec 27, 28 and 33.

813 - Located approximately 6 miles southwest of Conchas, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,350 and 4,500 feet. The allotment is located on the USGS Bookout Ranch and Tenaja Mesa Quadrangle 7.5 minute series topographic maps. T. 13 N., R. 25 E. Sec 22 and 25. This allotment has 3 parcels.

846 - Located approximately 12 miles southwest of Conchas, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,380 and 4,440 feet. The allotment is located on the USGS Bookout Ranch Quadrangle 7.5 minute series topographic map. T. 12 N., R. 24 E. Sec 2. This allotment has 2 parcels.

858 - Located approximately 9 miles southwest of Conchas, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,400 and 4,650 feet. The allotment is located on the USGS Bookout Ranch Quadrangle 7.5 minute series topographic map. T. 12 N., R. 25 E. Sec 4 and 6. This allotment has 2 parcels.

869 - Located approximately 7 miles south southwest of Conchas, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,400 and 5,200 feet. The allotment is located on the USGS Bookout Ranch, Ortega Tank and Tenaja Mesa Quadrangle 7.5 minute series topographic maps. T. 12 N., R. 26 E. Sec 6, 7, 18 and 19; T. 13 N., R. 25 E. Sec 34. This allotment has 4 parcels.

883 - Located approximately 8 miles east of Trujillo, in San Miguel, New Mexico. Elevation on this allotment is roughly between 5,200 and 5,400 feet. The allotment is located on the USGS Cañon Olguin Quadrangle 7.5 minute series topographic map. T. 15 N., R. 24 E. Sec 24.

890 - Located approximately 4 miles west of Variadero, in San Miguel, New Mexico. Elevation on this allotment is roughly between 5,200 and 5,400 feet. The allotment is located on the USGS Cerro de Corazon Quadrangle 7.5 minute series topographic map. T. 14 N., R. 23 E. Sec 30.

934 - Located approximately 3 miles east of Trementina, in San Miguel County, New Mexico. Elevation on this allotment is roughly between 4,800 and 5,200 feet. The allotment is located on the USGS Variadero Quadrangle

7.5 minute series topographic map. T. 14 N., R. 23 E. Sec 1 and 12; T. 14 N., R. 24 E. Sec 6 and 7.

See Figure 1 for a map of the subject allotments.

AFFECTED ENVIRONMENT / ENVIRONMENTAL IMPACTS

Air Quality

The Clean Air Act Amendments in 1990 required that all federal actions conform to State Implementation Plans for air quality. One non-attainment area has been designated in New Mexico, but is not located on or near the subject allotments.

Although the subject allotments are not within a non-attainment area, greenhouse gas emissions from non-renewable sources often occur from ranching operations. Greenhouse gases (GHG), including carbon dioxide (CO₂) and methane (CH₄), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, greenhouse gas emissions are linked to climate change.

Under the **proposed action**, GHG emissions are expected to be generated primarily from vehicles used to manage cattle operations and may be estimated to be about 10 tons of relevant emission. The BLM recommends using best management practices to reduce these emissions, such as reducing number of trips, keeping vehicles well maintained and purchasing more fuel efficient vehicles. There would be no effect under the **no grazing alternative**.

Climate

The National Academy of Sciences (2006) has acknowledged that there are uncertainties regarding how climate change may affect different regions. Potential impacts to natural resources and plant and animal species due to climate change are also likely to be varied. In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50% since the 1970's (Enquist and Gori). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95% of the geographical area of New Mexico. In north central and northeastern New Mexico during the past 10 years (1998-2007) the temperature has been at or above average and precipitation has been fluctuating annually, but it is important to note that between 2000 and 2004 the 12 month running average for precipitation was below the annual average (based on the Northern Mountains Climate Division, New Mexico from the Western Regional Climate Center).

It is anticipated that monitoring efforts would help indicate vegetation shifts, allowing for management modifications to address global climate change.

Standards for Rangeland Health

Field crews completed the Rangeland Health Evaluation Summary Worksheet for all the subject allotments, with subdivision by parcel or distinct ecological site. Results are summarized in Table 2 by Soil/Site Stability, Hydrologic Function and Biotic Integrity and averages by site. In Table 2 each percent is a percent similar indicator score. The indicator score is created by multiplying an assigned value for departure from site descriptions/reference areas by the number of indicators at the level. Departure scores are categorized as: none to slight = 5, slight to moderate = 4, moderate = 3, moderate to extreme = 2 and extreme = 1, thus giving the most similar sites the highest score. For example, if all indicators under Soil/Site Stability were rated none to slight (5), the equation would be: (score) (nine indicators) / 45 X 100 = 100% similarity, or what is expected based on an Ecological Site Description.

Table 2. Summary of indicators by allotment.

Allotment Number	Observers	Survey Date	Percent of Soil/Site Stability	Percent of Hydrologic Function	Percent of Biotic Integrity	Average Percentage
718	Young	6/5/2008	78%	82%	93%	84%
769	Young	6/5/2008	90%	90%	95%	92%
797	Young	6/3/2008	86%	84%	91%	87%
800	Young	6/3/2008	90%	80%	89%	86%
813	Young	6/5/2008	84%	86%	93%	88%
846	Young	6/4/2008	96%	96%	98%	97%
858	Young	6/4/2008	82%	84%	93%	86%
869	Young	6/4/2008	86%	88%	95%	90%
883	Young	6/3/2008	88%	88%	95%	90%
890	Young	6/4/2008	86%	84%	91%	87%
934	Harmon, Young	4/1/2008	90%	92%	95%	92%

The Standards are a tool for assessing range condition and are not analyzed under **either alternative** here. If an allotment or pasture falls below 80% in the Soil Site Stability, Hydrologic, or Biotic indicators, monitoring should be established to determine the cause/s of the low rating. When the casual factor is determined to be livestock, grazing will be manipulated and/or range improvements will be implemented to improve conditions. The BLM, in consultation with the permittee and various other agencies, through an interdisciplinary effort, would develop goals and objectives for the areas that are falling below 80% to improve the condition.

Soils

The following soils are identified as occurring on the allotments analyzed in the watershed:

Conchas-Latom association, undulating. These soils consist of loam and sandy loams, with rooting depths approximately 8 to 40 inches. Parent materials of sandstone and shale comprise these soils. Average annual precipitation is around 16 inches. Vegetation is characterized by blue grama, black grama, galleta, sideoats grama and little bluestem.

Crews-Tricon association, undulating. These soils consist of silt loams, with rooting depths 8 to 40 inches. Parent materials of mixed material derived from sandstone and shale comprise these soils. Average annual precipitation ranges between 14 and 18 inches. Vegetation is characterized by blue grama, sideoats grama, little bluestem, New Mexico feathergrass, western wheatgrass, pinyon and juniper.

La Lande-Redona association, undulating. These soils consist of loam and sandy loams, with rooting depths over 60 inches. Parent materials of alluvium derived from sandstone and shale comprise these soils. Average annual precipitation is around 14 inches. Vegetation is characterized by blue grama, black grama, sand dropseed, sideoats grama, little bluestem, yucca and galleta.

Latom-Newkirk-Rock outcrop association, rolling. These soils consist of fine sandy loams and rock outcrops, with shallow rooting depths of approximately 13 to 20 inches. Parent material is sandstone. Average annual precipitation is around 14 inches. Vegetation is characterized by sideoats grama, blue grama, black grama and little bluestem

Montoya-Tucumacari association, gently sloping. These soils consist of loam and clay loam, with rooting depths over 60 inches. Parent materials of derived primarily from shale comprise these soils. Average annual precipitation is around 14 inches. Vegetation is characterized by blue grama, alkali sacaton, vine-mesquite, sideoats grama, sand dropseed, tobosa, and galleta.

Newkirk-Walkon-Conchas association, undulating. These soils consist of loam and sandy loams, with rooting depths approximately 13 to 40 inches. Parent materials of sandstone and shale comprise these soils. Average annual precipitation is around 14 inches. Vegetation is characterized by blue grama, black grama, galleta, sideoats grama, little bluestem and New Mexico feathergrass.

Redona-Quay association, undulating. These soils consist of loams, with rooting depths over 60 inches. Parent materials of alluvium derived from sandstone and shale comprise these soils. Average annual precipitation is around 14 inches. Vegetation is characterized by blue grama, black grama, vine-mesquite, sideoats grama, western wheat, yucca and galleta.

Rock outcrop-Torriorthents complex, very steep. This soil is stony with variable depths and texture. Parent materials of sandstone and shale comprise this soil. Average annual precipitation is around 14 inches. Vegetation is characterized by little bluestem, sideoats grama, blue grama and galleta.

Tuloso-Sombordoro-Rock outcrop complex, moderately sloping. These soils consist of stony sandy and stony loams with rooting depths ranging from 8 to 20 inches. Parent materials are primarily derived from sandstone. Average annual precipitation is about 16 inches. Vegetation is characterized by pinyon, juniper, blue grama, hairy grama, sideoats grama, and pinyon ricegrass.

Rock outcrop-Torriorthents complex, very steep. This soil is stony with variable depths and texture. Parent materials of sandstone and shale comprise this soil. Average annual precipitation is around 14 inches. Vegetation is characterized by little bluestem, sideoats grama, blue grama and galleta.

Ustorthents-Rock outcrop complex, very steep. This soil is stony with variable depths and texture. Parent materials of sandstone and shale comprise this soil. Average annual precipitation is around 16 inches. Vegetation is characterized by sideoats grama, pinyon, juniper and oak.

Under current management, soil indicators for the allotments point to good soil condition (Average = 84%) with the lowest Soil and Site Stability rating being 78% (see the ‘Standards for Rangeland Health’ portion and Table 2).

Based on current knowledge and current management practices, the **proposed action** would result in no impact or have a positive impact. The **no grazing alternative** would remove livestock from the area and eliminate both the positive and negative impacts of livestock.

Water Quality

Surface – These allotments are located in Hydrologic Unit Code (HUC) 11080005, or the Conchas Watershed, which comprise 650,999 acres along the Conchas River and HUC 11080006, or the Upper Canadian / Ute Reservoir Watershed, which comprises 1,429,142 acres. These Hydrologic Units are further divided into smaller HUCs. The allotments analyzed in this document occur in four of these smaller HUCs (Table 3).

Table 3. Summary of BLM allotments by 10 Digit HUC (subwatershed and NMED evaluation unit).

NMED Assessment Unit	Subwatershed	Allotments	BLM Acreage	Percent of Subwatershed
NM-2303_00	Atarque Creek - Canadian River	813, 869	751	0.4%
NM-2305.A_010	Headwaters Conchas River	769, 797, 800	554	0.2%
NM-2305.A_010	Outlet Conchas River	718, 813, 883, 890, 934	840	0.4%
NM-2305.A_010	Cuervo Creek	718, 846, 858	207	0.2%

The New Mexico Environment Department (NMED) surveyed and evaluated perennial reaches in the Conchas

and Upper Canadian / Ute Reservoir watersheds in 2006 and identified impairments for stream reaches not meeting water quality standards for designated uses. No impairments were identified for the above assessment units.

Based on the Environmental Protection Agency (EPA) assessments and the Rangeland Health Evaluation surveys, there are not any current, or likely to be any increased, water quality impairments resulting from the **proposed action**. This conclusion is based on the site assessment showing few indicators of surface erosion as a factor to reduce water quality. Soil/Site Stability and Hydrologic Function site evaluations rated on average 84% and 86% respectively across the subject allotments. The **no grazing alternative** may or may not reduce probable sources of impairment by removing livestock due to the low number of livestock and the low percentage of federal land.

Subsurface water – Current impairments are not identified and ground water is not likely to be impacted by the proposed cattle. Therefore, based on current knowledge, there would be no impact from **either alternative**.

Vegetation

Vegetation expected for the soils identified in the allotments include: New Mexico feathergrass, western wheatgrass, pinyon, juniper, blue grama, black grama, Galleta, sideoats grama, little bluestem, sand dropseed, yucca, alkali sacaton, vine-mesquite, tobosa, hairy grama, oak, pinyon ricegrass and other species in smaller amounts.

Grazing may impact vegetation under adverse climate conditions or under poor grazing management. Other impacts to vegetation have been the lack of natural disturbance, such as fire. It has been determined that the current grazing systems within the subject allotments are not adversely affecting the vegetation. The lowest biotic integrity rating for the subject allotments was 89% similarity to the Ecological Site Description (See section ‘Standards for Rangeland Health and Table 2). Residual impacts of livestock grazing would not change under the **proposed action** due to the moderate removal of current year’s growth on forage species. Therefore, under the **proposed action**, no additional impacts to vegetation are expected. Under the **no grazing alternative**, there would be no measurable vegetative removal from the allotment.

Noxious Weeds

Any time livestock are grazed in other areas and then returned to the allotment or fed non-certified feed there is a risk of introducing exotic or noxious plant species to the allotment. The **proposed action** would not pose additional risks of introduction or spread of noxious weeds beyond those already occurring. Under both the **proposed action** and **no grazing alternative**, weeds could be introduced by road maintenance equipment or recreational activities.

Under the **proposed action**, weeds could be introduced to the allotment through livestock feces, emergency feed, watering equipment or vehicles associated with the management of livestock. The **no grazing alternative**, would limit the risk of new infestation to those caused by human activities and wildlife.

Cultural Resources

Reconnaissance archaeology inventories were carried out within the area of the subject allotments during the spring and summer of 1999. Allotments #718 and #883 were visited by an archaeologist and five sites were located. All sites were lithic scatters with one site also having ceramics, ground stone and burnt bone. Also a projectile point dated to the Basketmaker III Period (AD 500-700). The other allotments were visited by members of the interdisciplinary resource team. Although archaeological sites were discovered in some of the allotments visited, no direct effects were observed on any of these sites that can be related to livestock grazing. The general area of the allotments was likely used in prehistoric times for hunting and gathering activities and

seasonal camp sites.

Under the **proposed action**, grazing intensity would remain at current levels. Nine of the eleven subject allotments were not visited by an archaeologist but based upon a literature, survey files review and the reconnaissance inventory, no direct impacts have been observed to potential cultural resources from current grazing activities. Natural erosion due to ground disturbance could damage sites; these effects may be slightly less under the **no grazing alternative** than the **proposed action**.

Wildlife

Existing habitat with the allotments include; pinyon-juniper woodlands, and supports seasonal home ranges for elk, mule deer, mountain lion, black bear, fox, coyote, rodents, bats, raptors, songbirds, amphibians, and a variety of insects.

Judicious grazing practices can have positive effects on wildlife and can be a beneficial management tool, including increases in vegetation composition diversity and improvement of forage availability and quality for early to mid-successional wildlife species; creation of patchy habitat with high structural diversity for feeding, nesting and hiding; opening up areas of dense vegetation to improve foraging areas for a variety of wildlife; removing rank, coarse grass that would encourage regrowth and improve abundance of high quality forage for wild ungulates; stimulating browse production by reducing grass biomass; and improving nutritional quality of browse by stimulating plant regrowth (NMDGF 2005).

Studies in northern New Mexico have indicated that total elimination of grazing did not improve range condition on upland or lowland sites when compared with adjacent moderately grazed areas (Holecheck and Stephenson 1985). Smith et al. (1996) found that lightly grazed climax rangelands and conservatively grazed late seral rangelands had similar songbird and total bird populations. They also concluded that wildlife diversity was higher on the conservatively grazed late seral than the lightly grazed climax rangeland. Studies in southeastern Arizona by Bock et al. (1984) support the hypothesis that conservatively to moderately grazed areas in mid or late seral condition supported greater diversity of wildlife than ungrazed areas in climax condition. Livestock grazing was also shown to enhance forage for elk and manage their distribution by increasing availability and nutritional value of preferred grasses in early growth stages (Holechek et al. 2004).

Best management practices would ensure that forage production within this area can support fish, wildlife and livestock on a sustained basis. The functionality assessment of habitat components is outlined in Table 4.

Table 4. Functionality assessment for Biotic Fauna.

Allotment	Biotic Fauna Rating	Summary
718	Proper Functioning Condition	N/A
769	Proper Functioning Condition	N/A
797	Functioning at Risk-Static	Piñon / Juniper expansion
800	Functioning at Risk-Static	Piñon / Juniper expansion
813	Proper Functioning Condition	N/A
846	Proper Functioning Condition	N/A
858	Proper Functioning Condition	N/A
869	Proper Functioning Condition	N/A
883	Proper Functioning Condition	N/A
890	Proper Functioning Condition	N/A
934	Proper Functioning Condition	N/A

The **proposed action** would not have a notable adverse impact on wildlife. The **no grazing alternative** would

remove all possible competition between wildlife and livestock.

Threatened or Endangered Species

Federally listed threatened (T) and endangered (E) species in San Miguel County, New Mexico, include: black-footed ferret (*Mustela nigripes*) (E); Southwestern willow flycatcher (*Empidonax traillii extimus*) (E); Holy Ghost Ipomopsis (*Ipomopsis sancti-spiritus*) (E); Arkansas river shiner (*Notropis girardi*) (T); and Mexican spotted owl (*Strix occidentalis lucida*) (T). It is determined that there are no federally listed threatened or endangered species likely to be found in the subject allotments. There is one state-listed threatened species which may be found in the area, the Bald eagle (*Haliaeetus leucocephalus*), during winter months. There is no designated critical habitat for any species listed by the U.S. Fish and Wildlife Service (USFWS) within the allotments. It is determined that the **proposed action** and **no grazing alternative** will have no affect on federally listed species, and no affect on state-listed threatened or endangered species.

Migratory bird species of conservation concern that have the potential to occur on the allotment include bald eagle, Brewer's sparrow, juniper titmouse, loggerhead shrike, mountain bluebird, prairie falcon, golden eagle, mourning dove, and pinyon jay. The **proposed action** has the potential to have a negative effect upon individual birds, eggs, young and/or the nesting habitat of ground nesting birds; however, there would be no noticeable impact to the population or to the species as a whole. The **no grazing alternative** could have either a beneficial or detrimental effect on individual migratory bird species of concern, depending on the response of range condition and individual species requirements, but affects at the population or species level would not be adverse.

Social / Economic Issues

BLM permits/leases are transferred to qualified applicants at the request of the current permittee/lessee; the BLM has had no influence on the social characterization of those who currently hold these permits. Therefore, it has been determined that neither the **proposed action** nor the **no grazing alternative** would be likely to result in impacts which would occur disproportionately in low-income groups, minorities or Indian tribes. With regard to economics, the **proposed action** would allow the permittee to continue the lifestyle they have known and earn money from cattle operations on federal lands. Suspension of the grazing permit under the **no grazing alternative** would cause monetary losses to the permittee/lessee, in the form of increased costs to rent additional pasture or in purchasing feed.

Cumulative Impacts

Cumulative Actions

Livestock grazing is only one of several disturbance activities within the area. Other possible cumulative actions in conjunction with livestock grazing on BLM administered lands include: off-road vehicles use, other recreational use and road construction and maintenance.

Cumulative Effects

Based on current management the land health standards are being met, therefore there would be no measurable cumulative impacts from the **proposed action** or the **no grazing alternative**. Also, BLM land comprises only a small portion of the watersheds, roughly 0.9% of the area within the Conchas watershed and 0.1% of the area within the Upper Canadian / Ute Reservoir watershed (percentages are relative to lands within Taos Field Office). The subject allotments cover roughly 29% of the BLM land in the Conchas watershed and 0.3% of the total land mass of this watershed, while the subject allotments cover roughly 60% of the BLM land in the Upper Canadian / Ute Reservoir watershed and 0.1% of the total land mass of this watershed. Due to the relatively low percentages of federal land involved, land health standards being met and no changes being made to livestock management on these allotments, there would be no measurable cumulative impacts from the **proposed action** or the **no grazing alternative**.

Consultation and Coordination

This Environmental Assessment has been mailed to all individuals or organizations who have notified the Taos Field Office of their interest. These individuals or organizations are given 15 days to make comments on the accuracy of this document.

Preparers

This document was prepared and reviewed by a team from the Taos Field Office. They include:

Merril Dicks - Archeologist
Scott Draney - Department of Game and Fish
Greg Gustina - Fishery Biologist
Brad Higdon - NEPA Compliance
Terry Humphrey - Multi-Resource Manager
Linus Meyer - Rangeland Management Specialist
Tami Torres - Outdoor Recreation Planner
Paul Williams – Archeologist
Valerie Williams - Wildlife Biologist
Lora Yonemoto - Realty Specialist
Jacob Young - Rangeland Management Specialist

References

Bock, C.E., J.H. Bock, W.R. Kenny, and V.M. Hawthorne. 1984. Response of birds, rodents, and vegetation to livestock exclosure in a semidesert grassland site. *Journal of Range Management* 37: 239-242.

Chaney, E., W. Elmore, W.S. Platts. 1993. *Managing Change: Livestock Grazing on Western Riparian Areas*. Northwest Resource Information Center, Eagle, Idaho. Produced for the U.S. Environmental Protection Agency. 31 pp.

EPA Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Environmental Protection Agency, Washington, D.C.

EPA, Natural Gas Star Program (2006 data) at: <http://www.epa.gov/gasstar/accomplish.htm>. Environmental Protection Agency, Washington, D.C.

Enquist, Carolyn and Gori, Dave. *Implications of Recent Climate Change on Conservation Priorities in New Mexico*. April 2008.

Holechek, J.L. and T. Stephenson. 1985. Comparison of big sagebrush vegetation in north central New Mexico under moderately grazed and grazing excluded conditions. *Journal of Range Management* 36: 455-456.

Holechek, J.L., T.T. Baker, and J.C. Boren. 2004. *Impacts of controlled grazing versus grazing exclusion on rangeland ecosystems: what we have learned*. New Mexico State University Cooperative Extension Service, Range Improvement Task Force Report 57. Las Cruces, New Mexico. 42 pp.

Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Basis (Summary for Policymakers)*. Cambridge University Press. Cambridge, England and New York, New York. (Available on the Internet: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>)

National Academy of Sciences. 2006. *Understanding and Responding to Climate Change: Highlights of National Academies Reports*. Division on Earth and Life Studies. National Academy of Sciences. Washington, D.C. (Available on the Internet: <http://dels.nas.edu/basc/Climate-HIGH.pdf>.)

New Mexico Department of Game and Fish. 2005. Comprehensive Wildlife Conservation Strategy for New Mexico. New Mexico Department of Game and Fish. Santa Fe, New Mexico. 526 pp + appendices.

Smith, G., J.L. Holechek, and M. Cardenas. 1996. Wildlife numbers on excellent and good condition Chihuahuan Desert rangelands: an observation. *Journal of Range Management* 49: 489-493.

Soil Conservation Service Soil Survey of Taos County and parts of Rio Arriba and Mora Counties, New Mexico, 1982.

Water Quality and Water Pollution Control in New Mexico, State of NM Water Quality Control Commission, 2002.

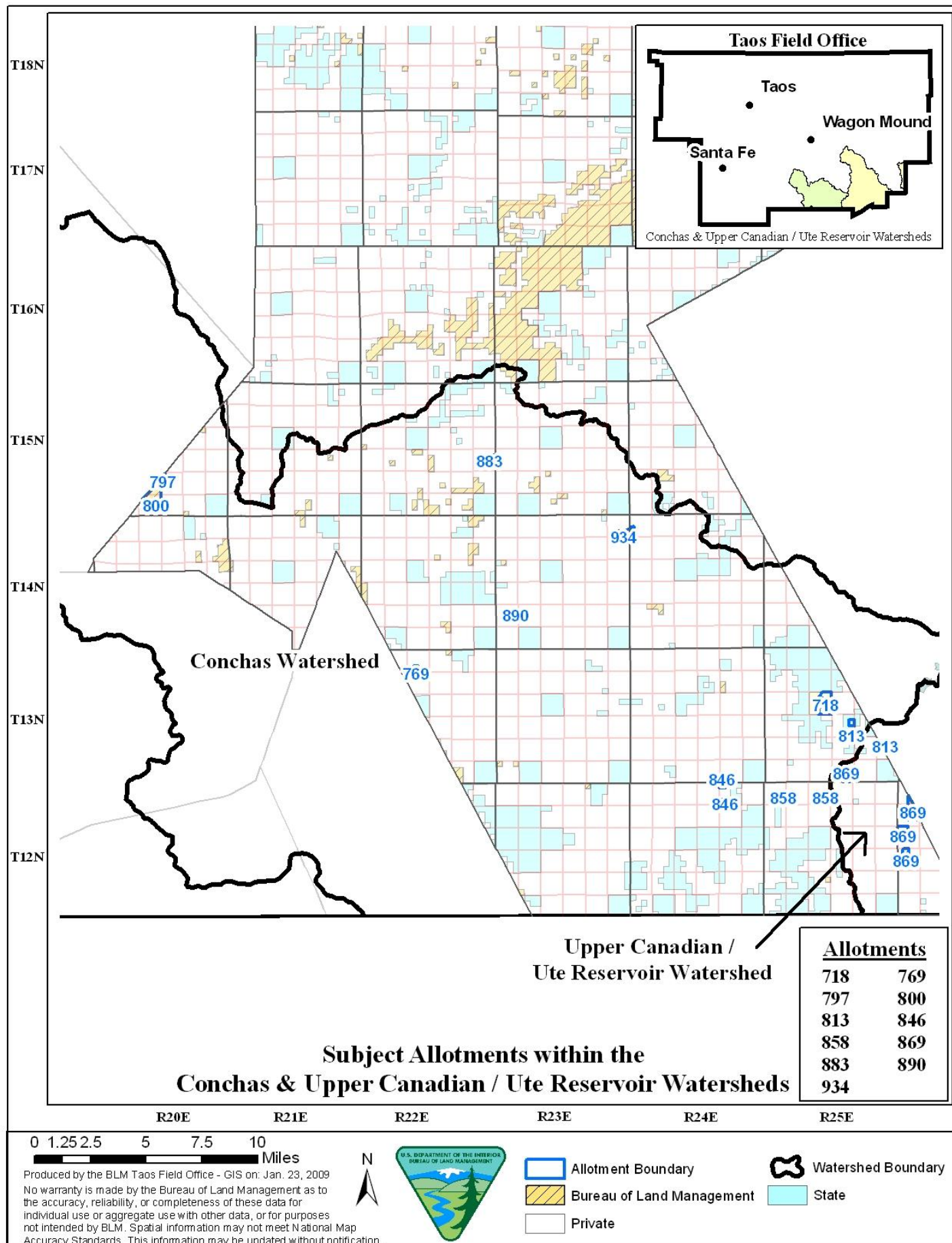


Figure 1. Map of subject allotments.